

Application No.: 10/701,045
Reply to Office Action of May 13, 2005

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Cancel claims 1-4.

5. (currently amended) A- An amplifier circuit having a transistor for amplifying a radio frequency signal fed thereto, such amplified signal being coupled to a load, such amplifier comprising:

(A) a circuit for determining temperature of the transistor an active semiconductor device, comprising:

(Aa) a semiconductor substrate having thereon the transistor active device;

(Ab) a bridge circuit comprising:

(i) a first thermal sensitive device disposed in thermal contact with an electrode of the transistor active device, such first thermal sensitive device having a pair of terminals, a first one of the pair of terminals being connected to a first node and a second one of the pair of terminals being connected to a second node;

(ii) a second thermal sensitive device disposed in thermal contact with the electrode of the transistor active device, such second thermal sensitive device having a pair of terminals, a first one of the pair of terminals being connected to a third node and a second one of the pair of terminals being connected to a fourth node;

(iii) a third thermal sensitive device disposed in thermal contact with the substrate, such third thermal sensitive device having a pair of terminals, a first one of the pair of terminals being connected to the second node and a

Application No.: 10/701,045
Reply to Office Action of May 13, 2005

second one of the pair of terminals being connected to the fourth node;

(iv) a fourth thermal sensitive device disposed in thermal contact with the substrate, such fourth thermal sensitive device having a pair of terminals, a first one of the pair of terminals being connected to the first node and a second one of the pair of terminals being connected to the third node;

(v) a voltage source providing a voltage potential connected between the first node and the fourth node;

(vi) an output provided by the second node and the third node;

(B) a tuning circuit coupled between an output electrode of the transistor and the load, such tuning circuit having a tunable element controlled by a control signal fed to such tunable element;

(C) an electrical device coupled between the voltage source and the transistor for providing a measure of power fed to the transistor; and

(D) a processor coupled to the electrical device and to output provided by the second node and the third node for producing the control signal.

Cancel claims 6-10.

11. (currently amended) The amplifier recited in claim 5 wherein A circuit for determining temperature of an active semiconductor device, comprising:

(A) a semiconductor substrate having thereon the active device;

(B) a Wheatstone bridge circuit having in each of four branches thereof a thermal sensitive device, one pair of such thermal sensitive devices being in thermal contact with an electrode of the active device;

wherein the thermal sensitive devices are resistors;

wherein the active device is a transistor; and

including a tuning circuit coupled to an output of the transistor, such tuning circuit having a tunable element controlled by a control signal fed to such tunable element.

Application No.: 10/701,045
Reply to Office Action of May 13, 2005

Cancel claim 12.

13. (currently amended) The circuit recited in claim ~~5~~12 wherein the output provided by the ~~Wheatstone bridge~~ provides a measure of a temperature difference between the temperature of the transistor and ambient temperature.

14. (currently amended) The circuit recited in claim ~~13~~5 wherein the processor produces the control signal to maximize power fed to the transistor and minimize power dissipated by such transistor.

Cancel claim 15 - 21.

22. (NEW) The circuit recited in claim 5 wherein the electrical device is a resistor.